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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/983,090	10/23/2001	Yutaka Kitamura	Q66650	9148

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EXAMINER
MCANULTY, TIMOTHY P

ART UNIT	PAPER NUMBER
3682	

DATE MAILED: 09/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/983,090	Applicant(s) KITAMURA ET AL.	
	Examiner Timothy P McAnulty	Art Unit 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) *5,7 and 8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6, and 9-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-4,10,12,13,14,16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al. in view of Bartos et al.

Hayakawa et al. discloses in figures 2 and 3, a belt transmission apparatus comprising a rotating electric machine pulley 5; an engine pulley 4; an auxiliary pulley 8; a belt tension adjuster 1 having a pulley unit 20 and an automatic belt tensioner having an elastically deformable spring 36 located within a housing, a push rod 26, an elastic deformation unit 31,32,35. Hayakawa et al. further discloses in figure 2 and in lines 32-55 of column 2, a central processing unit 9 which sets the position of said push rod based on an rpm of said engine, inherently on a vehicle speed if it adjusts the position of said push rod based on the rpm of said engine, and the tension of said belt.

Hayakawa et al. discloses the basic apparatus as previously cited but does not disclose said electric machine pulley being a generator. However, Bartos et al. discloses an automatic belt tensioner for a combined starter generator mounted on a vehicle. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hayakawa et al. in view of the teachings of Bartos et al. to include a starter generator as said rotating electric machine pulley so as to provide a single rotating electric machine pulley within said belt transmission apparatus to eliminate the need for two components.

Said automatic belt tensioner inherently adjusts the tension of the belt to be greater when said engine is started by said rotating electric machine than when said accessory pulley is driven after said engine is started since said automatic belt tensioner automatically adjusts tension in said belt, especially when a starting torque applied to said belt is greater than a driving torque applied to said belt.

3. Claims 6,9,17, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al. in view of Trzmiel et al.

Hayakawa et al. discloses the basic apparatus but does not disclose said elastic deformation unit comprising an electromagnetic coil, a spool, a cylindrical housing, and a piston. However, Trzmiel et al. teaches in figure 1, an automatic tensioner comprising an electromagnetic coil 56, a spool (not numbered) a cylindrical housing 5, a viscous fluid within said housing, and a piston 14. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hayakawa et al. in view of the teachings of Trzmiel et al. to provide an elastic deformation unit comprising an electromagnetic coil 56, a spool (not numbered) a cylindrical housing 5, a viscous fluid within said housing, and a piston 14 so as to provide deformation of said spring with hydraulic fluid pressure instead of a mechanical gear system to achieve more precise position of said push rod.

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al. in view of Foster et al.

Hayakawa et al. discloses the basic apparatus as previously cited but does not disclose said central processing unit set the position of the push rod based on an engine starting signal. However, Foster et al. teaches in 2, a belt tensioner which adjusts the tension within a belt

entrained on pulleys of a vehicle based on an engine starting signal 100,101. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hayakawa et al. in view of the teachings of foster et al. to include an engine starting signal to adjust the positioning of the push rod so as to provide proper tensioning of said belt when said belt is in a starting mode.

5. Claims 15 and 20 rejected under 35 U.S.C. 103(a) as being unpatentable over Hayakawa et al. in view of Bartos et al. as applied to claims1-4,10,12,13,14,16, and 19 above and further in view of JP5-18447.

Hayakawa et al. in view of Bartos et al. discloses the basic apparatus as previously cited but does not disclose said pulley being movable about an axis offset from a rotational axis of said tension pulley. However, JP5-18447 teaches in figure 3, a belt tensioner comprising a tension pulley rotationally mounted to a pulley unit wherein said pulley unit is rotationally mounted to an engine wherein a rotational axis of said tension pulley is offset from a rotational axis of said pulley unit P. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Hayakawa et al. in view of the teachings of JP5-18447 to provide a pulley unit being rotatably mounted to an engine having a rotational axis offset from a rotational axis of the tension pulley so as to provide a more compact mounting arrangement of said belt transmission apparatus and thus conserve mounting space especially associated with smaller engine automobiles where space is limited.

Response to Arguments

6. Applicant's arguments filed 22 July 2003 have been fully considered but they are not persuasive. Figure 9 of Hayakawa et al. is not a time related curve and does not indicate how

belt tension is increased or decreased from engine start through accessory driving. Figure 9 merely relates how tension is applied to the belt as a function of torque, i.e., when torque is high belt tension is high. Inherently torque is greater during engine starting than during accessory driving, as such, according to figure 9 belt tension would also be greater during engine starting than during accessory driving for the reasons previously set forth.

It is unclear as to where in Hayakawa et al. applicant asserts the opposite is true. As disclosed by Hayakawa et al. the optimum tension is dependent on the particular torque of the belt according to transient torque loads applied to the belt. The central processing unit provides signals to the automatic belt tensioner to adjust the actual tension to the optimum tension if and when the actual tension does not equal the optimum tension. The optimum tension is a calculated value and corresponds to ensuring efficient power transmission by the belt.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy P McAnulty whose telephone number is 703.308.8684. The examiner can normally be reached on Monday-Friday (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bucci can be reached on 703.308.3668. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9326 for regular communications and 703.872.9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.308.1113.

9/25/03

DAVID A. BUCCI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600

tpm
September 24, 2003